

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of the Claims:

1. (Previously presented) A munitions casing comprising an annulus of a shape memory alloy disposed around said casing which shape memory alloy has been subjected to a combination of mechanical and thermal treatments so as to impart a memory wherein upon subsequent heating to a predetermined temperature, said memory causes said annulus to contract radially inwardly and rupture the said munitions casing.

2-4. (Cancelled)

5. (Previously presented) The casing as claimed in claim 1, wherein the shape memory alloy is selected from Cu-Al-Zn, Cu-Al-Ni, Cu-Ni-Al-Zn-Mn, Cu-Zn-Al-Mn and Ti-Ni alloys.

6. (Previously presented) The casing as claimed in claim 1, wherein a cutting means is located between the annulus and the casing and is arranged, such that in use, the radially inward force exerted by the annulus is concentrated onto a relatively small area of the munitions casing.

7. (Previously presented) The casing as claimed in claim 6, wherein the cutting means is selected from a spike, blade or sharp edge.

8. (Previously presented) The casing as claimed in claim 6 wherein the cutting means is retained in a retracted position prior to use, such that it is not in direct contact with said casing.

9-11. (Cancelled)

12. (Previously presented) The casing as claimed in claim 1 wherein the annulus is a wire winding and is wound within a housing which is located around the casing.

13-16 (Cancelled)

17. (Withdrawn) A method of using a munitions casing as claimed in claim 1 comprising locating the annulus, around the outer surface of the munitions casing and arranging for an internal heater to be applied to said at least one annulus, wherein the internal heater is capable of providing subsequent heating to the predetermined temperature so as to cause the annulus to rupture the munitions casing.

18-36. (Cancelled)

37 (Previously presented) The casing as claimed in claim 1, wherein the shape memory alloy has a transition temperature range which lies in the range of 80°C -150°C.

38-49. (Cancelled)

50. (Previously presented) The casing as claimed in claim 1, wherein the annulus is comprised of a plurality of windings of shape memory alloy in wire form.

51. (Previously presented) The casing as claimed in claim 8 wherein the cutting means is retained in the retracted position by means of a sacrificial spacer, a bias means, sacrificial retaining pins or a shearable adhesive bond.

52. (Previously presented) The casing as claimed in claim 1, wherein heating of the annulus is afforded by an external heater or an internal heater.

53. (Previously presented) The casing as claimed in claim 12 wherein the housing extends wholly or partly around the perimeter of the munition casing.

54. (Previously presented) The A casing as claimed in either claim 12, wherein the housing is U-shaped or rectangular in cross section.

55. (Previously presented) The A casing as claimed in claim 54, wherein part of the length of the housing is provided with a flange which extends laterally on each side of the base of the housing.

56. (Previously presented) The casing as claimed in claim 12, wherein the walls of the housing are cut to provide reduced flexural stiffness.

57. (Previously presented) The casing as claimed in claim 1 which is a casing for a shell, bomb, torpedo, missile or rocket motor.

58. (Previously presented) The casing as claimed in claim 57, wherein the munitions casing is an overwound munition.

59. (Previously presented) The casing as claimed in claim 1, which forms part of a launch tube assembly.

60. (Previously presented) The casing as claimed in claim 57 containing an energetic material.

61. (Previously presented) The casing as claimed in claims 60 wherein the energetic material is propellant or high explosive.

62. (Withdrawn) A method of manufacturing a munitions casing as claimed in claim 1, wherein the annulus of the shape memory alloy is

- i) subjected to a combination of mechanical and thermal treatments and is selected to have a composition such that, when installed around the munitions casing and subjected to subsequent heating to a predetermined temperature, said annulus will contract radially inwardly and rupture the said munitions casing; and

- ii) installing the pretreated annulus of the shape memory alloy around the munitions casing.

63. (Withdrawn) The method of claim 62 wherein the shape memory alloy that forms the annulus is stretched or expanded at a temperature below the predetermined temperature prior to fitting on the munitions casing.

64. (Withdrawn) The casing as claimed in claim 52, wherein the internal heater provides heating by one of resistive ohmic heating of the annulus, by direct application of a current, or by inductive heating.

65. (Withdrawn) The casing as claimed in claim 1, wherein the annulus is comprised of a solid ring of shape memory alloy.